



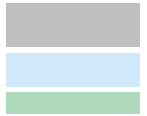
TransWest Express Transmission Project 2016 – 2017 Interregional Transmission Project Submittal



Submittals to California Independent System Operator,
WestConnect and Northern Tier Transmission Group

March 31, 2016

TransWest Express Transmission Project: 2016 - 2017 Cycle Interregional Transmission Project Submittals at a Glance

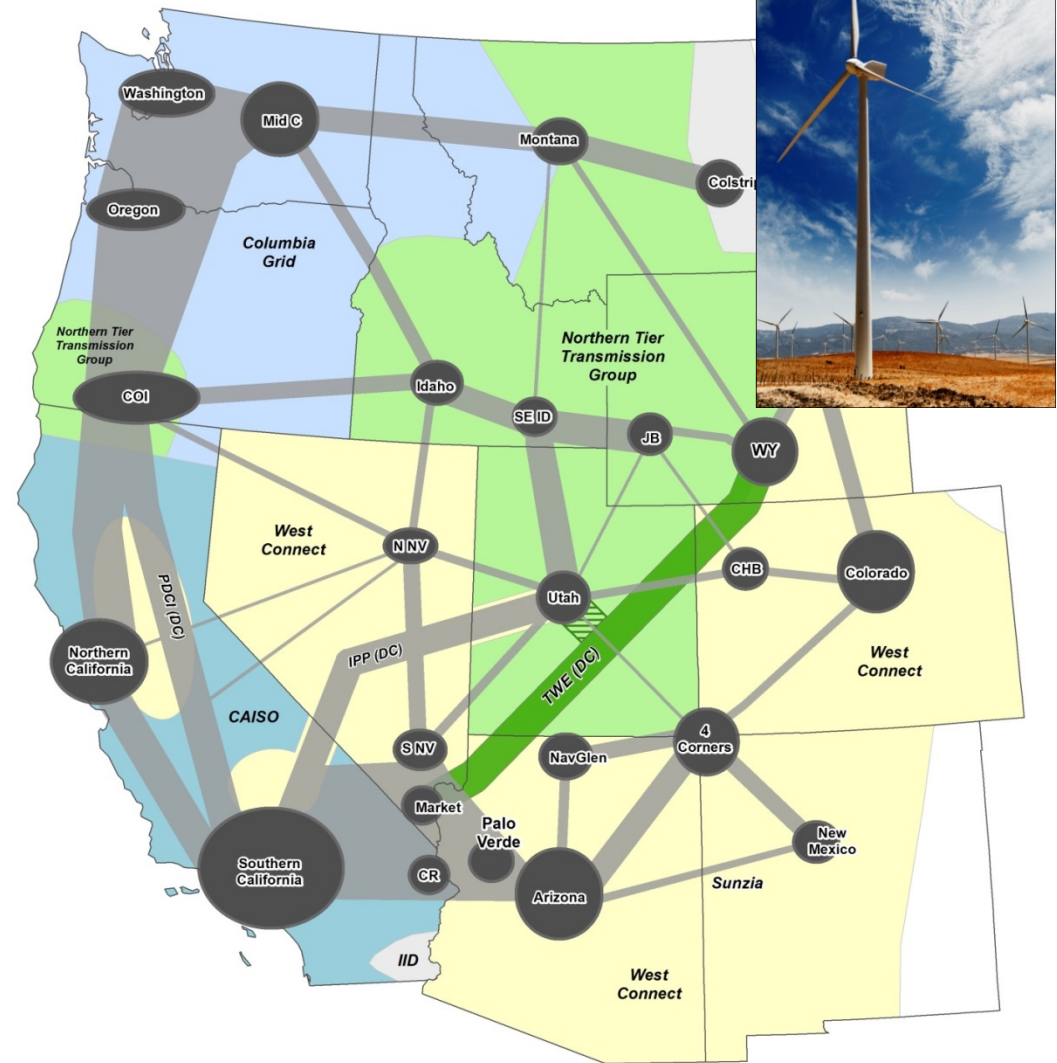


Regional Entities	California Independent System Operator	WestConnect	Northern Tier Transmission Group
Physical Connection	Yes	Yes	Yes
Cost Allocation Requested	Yes	Yes	No, not at this time ¹
Identified Primary Need	CA 50%, AZ and NV RPS Compliance		[Accommodate planned resources]
Load and Resource Data	Load served by high-quality Wyoming wind resources		The Chokecherry and Sierra Madre Wind Energy Project, and natural gas plants at Northern Terminal
Proposed Capacity	Phased 1,500/3,000 MW between CAISO & WestConnect system in NV and NTTG system in WY		
Proposed Technology	Two-Terminal, 600 kV, Bipole HVDC		
Circuit length	730 miles		
In-service Date	December 2020 or later as needed		
Permitting Status	FEIS issued May 2015, ROD in 2016		
System Study Status	Phase 2B in WECC Path Rating, Southern Terminal SIS underway		
Other Transmission Project Dependency	None. Proposed HVDC project will complement 500 kV AC build out among Regional Entities similar to DC and AC buildout along the West Coast		
Project Alternatives	Initial capacity can be greater. Potential mid-terminal at Intermountain Power Project and/or 500 kV AC north and/or south of IPP. Potential connection to WestConnect system in Wyoming.		
Project website	www.transwestexpress.net		
Project Sponsor	TransWest Express LLC David Smith (303) 299-1545 david.smith@tac-denver.com		

¹ TransWest Express LCC may request Cost Allocation from NTTG, if the NTTG 2016–2017 Study Plan includes additional needs (e.g. EIM benefits, etc.) and/or the ultimate TWE Project configuration (e.g. 500 kV AC, IPP terminal, etc.) results in TWE Project meeting NTTG needs.

TransWest Express Transmission Project: An Interregional Transmission Solution

- Proposed Project designed to provide needed transmission capacity from Desert Southwest Region to Wyoming wind resources
- 1,500 MW initial/3,000 MW final, 600 kV HVDC
 - Nevada connections: CAISO, WestConnect
 - Wyoming connections: NTTG, potential WestConnect
 - Potential Utah connections: NTTG, WestConnect
- Bi-directional operation
- Potential use of 500 kV AC as alternative configuration



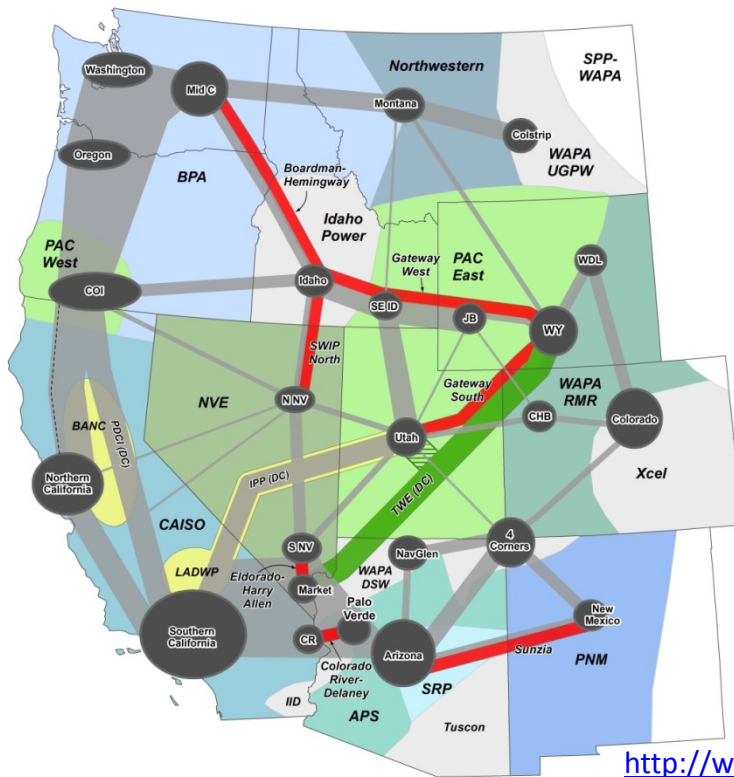
Project Need: Proposed TWE Project Meets Interregional Needs

- TWE Project developed as a Interregional Transmission Project to provide critical capacity between California and Rocky Mountain regions
- California RETI 2.0, CAISO Transmission Planning Process and WestConnect 2016 – 2017 examining required transmission to access Wyoming wind to help meet California's 50% RPS established in 2015 by SB 350 (Policy Need)
- Other potential needs: (Economic) increased transmission capacity between CAISO and PacifiCorp BAAs could provide benefits due to the EIM and potential regional ISO, common dispatch capacity sharing, PV solar over-generation management, etc.



Cost Effectiveness: HVDC and HVAC Technology Complement One Another In Meeting Interregional and Regional Needs

- HVDC technology is cost effective for interregional distances over 400 miles
- HVAC technology is cost effective for regional distances, where nodes are needed every 100 to 300 miles
- The PDCI/PACI on the Pacific coast is a great example of efficient technology application



**GATEWAY SOUTH AND TRANSWEST EXPRESS
CONCEPTUAL TECHNICAL REPORT**

Prepared for:
National Grid
Arizona Public Service Company
PacifiCorp
Wyoming Infrastructure Authority

Prepared by:
Black & Veatch

February 29, 2008

http://www.transwestexpress.net/WECC/docs/Conceptual_Technical_Report.pdf

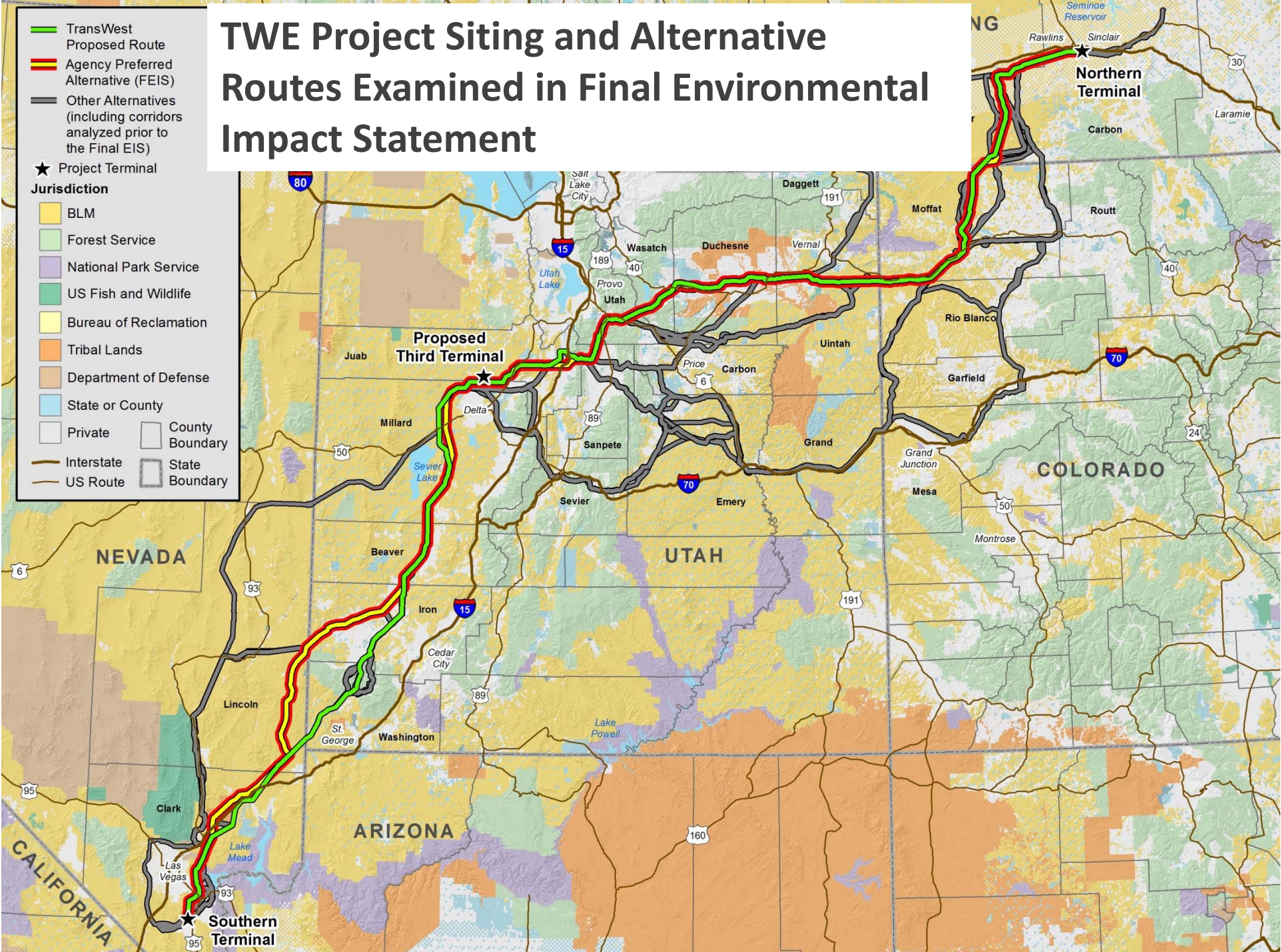
TWE Project Development Status

- Development initiated in 2008 with primary focus on permitting.
- TransWest and Western Area Power Administration jointly working on development since 2010.
- Bureau of Land Management and Western completed the Final Environmental Impact Statement in 2015. Federal Records of Decision and right-of-way grants for federal land (67% of line route) anticipated in 2016.
- 1,500 MW Phase 2 WECC Path Rating and Interconnection Studies underway.
- Three year construction schedule planned.
- TWE Project can be placed in-service as early as 2020 or as needed.
- TransWest Express affiliates are developing the 3,000 MW Chokecherry and Sierra Madre Wind Energy Project² and potential natural gas generating plant located near the TWE Project's Northern Terminal.

² www.powercompanyofwyoming.com



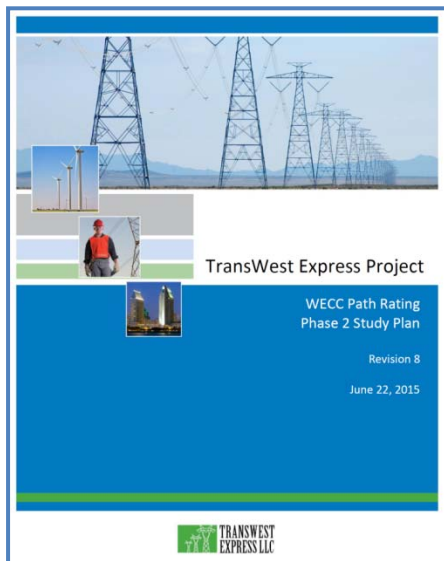
TWE Project Siting and Alternative Routes Examined in Final Environmental Impact Statement



WECC Path Rating and Transmission Interconnection Studies

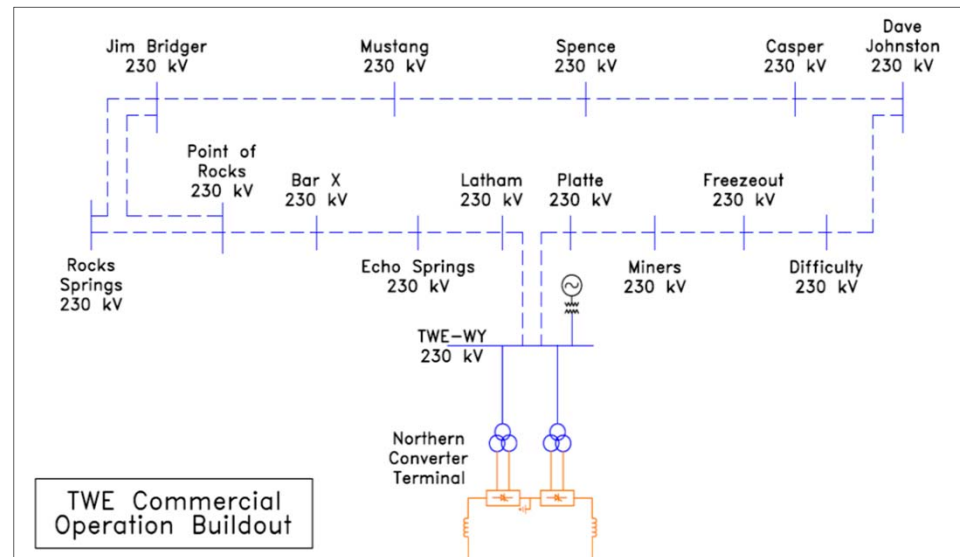
Phase 2 Path Rating Process

- Kick-off in 2010, revised Study Plan in 2015, in Phase 2B
- Seeking initial 1,500 MW north to south Path Rating



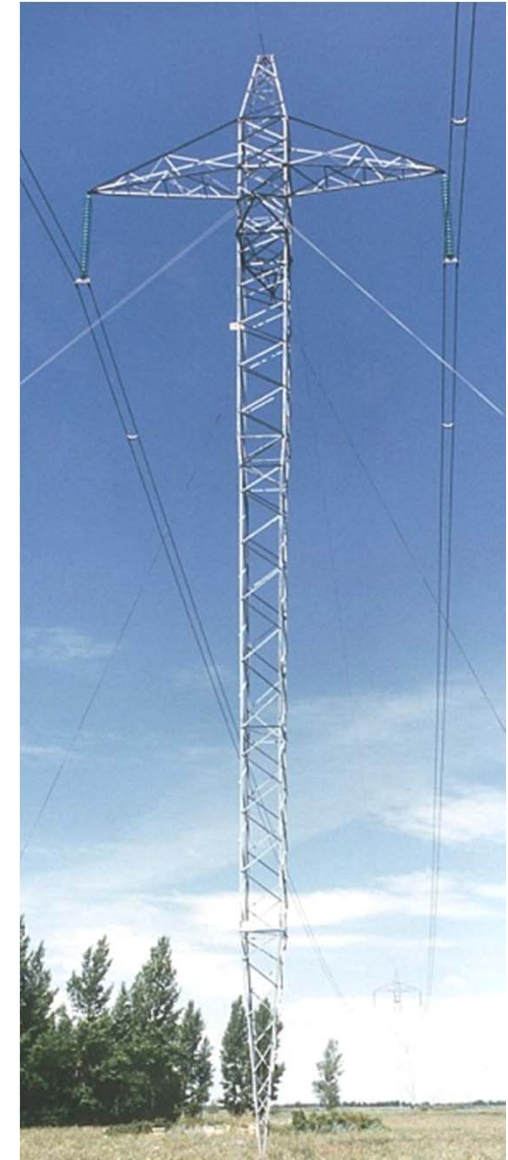
System Impact Studies

- PacifiCorp performing studies for northern interconnection
- TransWest performing studies for southern interconnections



Technical Data Submitted

- Configuration Alternatives – The TWE Project Plan of Development includes the potential to build a third terminal to connect to the 345 kV bus at the Intermountain Power Project in Delta, Utah, and to use 500 kV AC technology in lieu of HVDC in the segment from Wyoming to Utah and/or the segment from Utah to Nevada.
- Phasing Alternatives – The proposed TWE Project is to build a 3,000 MW line and only 1,500 MW of terminal capacity and add in parallel a 1,500 MW of terminal equipment later. The initial capacity can be between 1,500 to 2,500 MW and there are alternative phasing approaches that would lower costs if the period between initial and final build out is shortened.
- TransWest submitted the power flow models being used in the ongoing WECC and Interconnection studies to the planning entities.
- Capital Cost estimate – The initial 1,500 MW phase, \$2.4B. To increase the capacity to 3,000 MW, \$0.6B. TransWest has also estimated capital costs for the various alternatives listed above.



Development, Construction and Operation Plans

- TransWest plans to continue development activities including state and county permits, private ROW acquisition, Interconnection Agreements, Technical Specifications and project financing.
- TransWest project delivery plans are to use an Engineer, Procure, Construct (EPC) approach. The HVDC equipment will be procured separately and provided to the EPC contractor for installation.
- Alternative project delivery approaches may be used depending on the make-up the TWE Project owners and access to balance sheet financing at the time of financial close for construction.

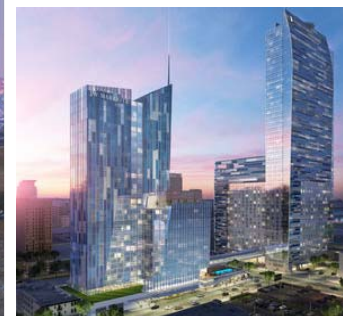


- The TWE Project will require full-time operators at both terminals along with maintenance staff. AC substation and transmission line operations and maintenance will be contracted out. Western, PacifiCorp and other utilities that operate in the region are likely candidates to perform these services.

TransWest Express LLC



- TransWest Express LLC is a wholly-owned affiliate of The Anschutz Corporation.
- The Anschutz Corporation is a privately held, multibillion dollar diversified company with worldwide investments in natural resources - including oil and gas, pipelines, ranching - and in other diverse industries.
- Anschutz has extensive experience in developing, constructing, financing and operating many large projects in the natural resources, real estate, sports and entertainment industries.
- The Anschutz Corporation has sufficient financial resources to provide the equity investment, although future equity partners will be obtained in the market. The Anschutz Corporation has on many occasions secured equity investments in other projects and continues to possess the appropriate reputation and relationships to attract such investments.



Interregional Project Review Considerations



- Reliability Assessments
 - Multiple reliability assessments currently underway with Path Rating and SIS work with multiple entities from three regional planning groups plus Columbia Grid are already directly participating. Requires coordination among TransWest, Project Review Group(s) and Regional Planning Entities to ensure reliability assessments are conducted efficiently for configurations under consideration.
- Policy and Economic Assessments
 - Proposed Project designed to meet CAISO and WestConnect Policy and Economic needs.
 - Proposed Project not designed to meet NTTG regional needs included within 2014 – 2015 Transmission Plan. NTTG 2016-2017 Study Plan expected to include similar needs.
 - Alternative Configurations may help meet NTTG needs. However, CAISO and WestConnect as the Regional Planning Agencies that will be considering cost allocation would need to initiate review of alternatives and coordinate with NTTG and TransWest.
- Cost Allocation Consideration
 - Seeking Cost Allocation consideration from CAISO and West Connect. Not currently seeking Cost Allocation consideration from NTTG.
 - Cost Allocation of DC Project avoids common transmission cost allocation pitfalls of AC projects.
 - DC controllability allows for subscription capacity process and limits free rider benefits.

Additional Information



TransWest looks forward to working with the regional entities and all stakeholders to provide additional information on the project and the opportunities.

Interregional Transmission has been built in the past and still provides benefits today!

(TransWest and U.S. Forest Service Meeting in Wasatch Forest, Utah, August 2015. Great meeting location for many reasons.)